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ABSTRACT

The Advisory Committee on Federal Workforce Quality Assessment was chartered to examine various work force quality assessment efforts in the federal government and provide advice on their adequacy and suggestions on their improvement or expansion. Objective data in recent research suggested that a universal decline in work force quality might not be the problem it was purported to be. Work force studies also suggested that the quality of the federal work force had not declined. However, other research noted work force shortcomings related to a need for additional training and better methods of selecting employees into specific occupations. The committee recommended continued development of an objective quality assessment system, widely applicable throughout the government, yet adaptable to each department's and agency's individual needs. Fourteen recommendations addressed the following elements of such a system: the definition of work force quality, the development of tools to assess quality, the determination of what is required to maintain a high quality work force, and possible follow-through actions. (Appendixes include a description of the Workforce Quality Assessment and Improvement Model recommended for adoption by the committee and biographies of committee members.) (YLB)

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FEDERAL WORKFORCE Quality

Measurement and Improvement

U.S. DEPARTMENT OF EDUCATION
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Advisory Committee on
Federal Workforce Quality Assessment

August 1992

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Merit Systems Protection Board

Office of Personnel Management

Dear Director Brook and Chairman Levinson:

The Advisory Committee on Federal Workforce Quality Assessment was chartered in January of 1990 to examine various workforce quality assessment efforts in the Federal Government and to provide advice on their adequacy and suggestions on their improvement or expansion.

The Committee has completed its review of Federal workforce quality assessment initiatives. In the course of its work, the Committee provided the Office of Personnel Management and the Merit Systems Protection Board recommendations on the development of specific instruments to collect workforce quality data, examined the elements of various workforce quality models, and formulated advice on how the Government should proceed with efforts to implement a systematic approach to the appraisal of workforce quality.

It is our privilege to transmit to you the report of the Committee, including our recommendations regarding how the Government should proceed in the critical work of gauging the quality of its workforce and promoting workforce improvement.

Sincerely,

Evangeline W. Swift

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Director, Office of Policy and Evaluation
U.S. Merit Systems Protection Board

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Federal Workforce Quality: Measurement and Improvement

A Report to the U.S. Merit Systems Protection Board and the
U.S. Office of Personnel Management

Advisory Committee on Federal Workforce Quality Assessment
August 1992

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Note: Biographical information about Committee members may be found in appendix B.

*As of the expiration of the Committee's term, January, 1992

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Executive Summary

To fulfill its responsibilities to our Nation's citizens, the Federal Government today, more than ever, must be administered by a competent and committed workforce. While anecdotal evidence has suggested that Federal workforce quality has declined in recent years, the lack of systematically gathered objective data has made it difficult to sustain or refute that negative perception. To address this situation, the U.S. Merit Systems Protection Board (MSPB) and the U.S. Office of Personnel Management (OPM) established the Advisory Committee on Federal Workforce Quality Assessment to provide perspective and advice on workforce quality issues and, specifically, methods for assessing that quality over time. This report contains the results of the Committee's deliberations over a two-year period.

Three million employees in more than 800 occupations in 100 different agencies make up the Federal civilian workforce. The need to assess the competence of this group is of particular concern, as we hear frequent references to a deterioration in the quality of Federal work and the Federal workforce. Government watchers, those whom the Government serves, and Government employees themselves have voiced fears about workforce quality and what they see as a growing mismatch between the skills of available workers and the complexity of the jobs they have to do. However, it remains unproven that this perception reflects reality. One reason for the lack of hard evidence to affirm or refute claims about Federal workforce deficiencies has been the absence of an objective quality assessment system that is acceptable throughout Government.

The Advisory Committee on Federal Workforce Quality Assessment was established to help fill the void by providing perspective and advice to MSPB and OPM. Because these two agencies, and others, are increasingly engaged in Federal workforce quality research, they asked the Committee to examine the Federal assessment efforts already underway, and to address matters such as the adequacy of those assessment efforts; the interpretation of data being collected; and strategies or interventions which are or should be undertaken in response to the results of workforce quality assessments.

Findings

In the course of its work the Committee found both reassurance about Federal workforce quality and ample need to continue to refine workforce quality assessment activities. The reassuring news is that despite enough anecdotal evidence to cause widespread alarm about the quality of the Federal workforce, objective data from some recent research on some specific occupations suggest that a universal decline in workforce quality may *not* be the problem it was purported to be. For example, recent studies of a group of Federal employees who are first-line supervisors and of others in the engineering, scientific, procurement, and computer fields support an opposing hypothesis, i.e., that the quality of these employees is not generally deficient and has remained fairly constant over time. (There may be, of course, exceptions by agency, occupation, or geographic area.) As these and other occupational groups continue to be reviewed and as more information becomes available, the Federal workforce quality picture will come into sharper focus.

The Advisory Committee on Federal Workforce Quality Assessment is encouraged by the results of the workforce studies it has examined that suggest the quality of the Federal workforce has not declined. At the same time, however, the Committee recognizes the need for improvement in Government workers and organizations. Other research reviewed by the Committee bears this out; for example, some studies noted workforce shortcomings related in part to a need for additional training and better methods of selecting employees into specific occupations. The Committee also recognizes that most of the research reported to date is not longitudinal, and that the results of longitudinal studies currently in progress will provide more definitive answers to questions about quality decline. Further, simply maintaining the same workforce quality levels may *not* be acceptable in an environment where the challenges facing Government and the corresponding complexity of the jobs are increasing. Therefore, the goal of increasing workforce quality, where possible, is a critical one. This lends support to the continuation of efforts to achieve competitive Federal salaries and benefits, to improve the work environment, and to improve the image of the Federal Government as an employer.

Both the Committee's positive findings and the warning signals that have come to light suggest it is in the national interest to further the consistent and methodical measurement of Federal workforce quality. The public deserves the best, and workforce quality measurement is a critical element in assuring that they have it.

In keeping with this goal, the Committee recommends continued development of an objective quality assessment system, widely applicable throughout the Government, and at the same time adaptable to each department's and agency's individual needs. Our recommendations address the elements of such a system, including the definition of workforce quality, the development of tools to assess quality, the determination of what is required to maintain a quality workforce, and possible follow-through actions. It is understood that Federal departments and agencies should work with employees and their unions in the various stages of this process.

Recommendations

Defining Quality

1 The workforce quality assessment effort in the Federal Government should include adoption of a broad definition of workforce quality that recognizes the interaction of individual attributes of workers, environmental forces, organizational processes, and individual, team, and organizational outcomes. (A model depicting the elements of this definition is on page 32 of this report.)

2 Comparisons between Federal and non-Federal quality should be included in the Federal Government's workforce quality assessment effort.

3 Department and agency heads should be charged with identifying their internal and external customers, and, in the light of legal, technical, and social requirements, should set explicit standards of production and service quality.

Assessment Tools

4 OPM should institutionalize its data collection program of longitudinal research on quality and provide Government decisionmakers with the results. OPM should also encourage departments and agencies to do their own studies, providing technical advice and instruments related to the various aspects of the workforce quality model.

5 OPM should continue research to develop measures that go beyond traditional assessment of cognitive abilities to encompass all of the attributes that predict high-quality work and retention at practical levels.

Maintaining Quality

6 Because quality is a concept applicable to the entire range of human resources management activities, department and agency heads, with guidance from OPM, should determine how the principles of the quality assessment and improvement model can be applied to their human resources management activities.

7 The workforce quality assessment effort in the Federal Government should include examination of the relationships between human resources management programs (e.g., compensation, benefits, training), and the productivity of individuals, teams, and organizations and the quality of the products and services they provide.

Followthrough

8 Departments and agencies should emphasize the connection between the quality of the work environment and the quality of individual, team, and organizational performance when carrying out training, program evaluation, and research.

9 Departments and agencies should emphasize the connection between the quality of leadership and supervision and the quality of individual, team, and organizational performance when carrying out training, program evaluation, and research.

10 Department and agency heads should ensure that evaluation and reward and recognition systems emphasize delivery of high-quality services and products.

11 Departments and agencies should establish skills clinics to assess training needs and enhance employee skills in delivering high-quality products and services.

12 OPM should continue to develop policies to maintain the framework for flexible work situations as a means of enhancing recruitment and retention. OPM should evaluate these flexibilities and study their impact on productivity and service delivery.

13 Department and agency heads should adopt policies and procedures to enhance the self-esteem of the Federal workforce, and should recognize, through word and deed, the value of the workforce and the virtues of workforce diversity.

14 MSPB, OPM, and other Federal departments and agencies concerned with workforce quality should establish a coordinating council to share information and resources and avoid duplication of effort. To guide this effort, OPM should collaborate with other council members and Federal employee union representatives to prepare a detailed and comprehensive workforce quality study plan.

Our approach, while it gives considerable emphasis to assessment of individual worker characteristics, also addresses the larger context, stressing the importance of the interrelationships among worker characteristics, environmental forces, team dynamics, organizational processes, and the outcomes of all these factors operating together. The Committee's work is intended to suggest a comprehensive and orderly way of thinking about the complicated subject of workforce quality assessment, to supplement the Government's progress to date in developing a program to measure quality and promote improvements, and to encourage agencies to include consideration of workforce quality issues in their strategic planning processes.

Background: Universal Concerns About Workforce Quality

Having a "quality workforce," in its most general sense, means having a workforce that can produce effectively and efficiently the products and services required by the people who use those products and services. Over the past decade, Americans have grown increasingly concerned about the quality of this country's workforce including that portion of the workforce employed by the Federal Government.

By the end of the 1980's, the quality of the American workforce in both the private and the public sectors had been scrutinized and criticized by many persons and organizations. The Department of Labor's Commission on Workforce Quality and Labor Market Efficiency was formed in 1988 in response to predictions that demographic trends, technological change, and increased international competition were creating a shortage of skilled workers to produce the goods and services required by American business and government. The Commission's report, issued in 1989, called for initiatives such as changing the educational system, encouraging business investment in training, increasing Federal funding of the Job Training Partnership Act and providing Federal support for child care.

Initiatives such as these were reemphasized with the release, in April 1991, of the President's strategy on education and were further highlighted, in June 1991, in the report of the Secretary of Labor's Commission on Achieving Necessary Skills (known as SCANS).[1] The President's aims are outlined in "America 2000: An Education Strategy," which is an action plan designed by the Department of Education to move the United States towards achieving educational goals that include strengthening the connection between education and work, and giving workers the opportunity to acquire the knowledge and skills necessary to compete in a global economy.[2] The SCANS Commission report, which builds on "America 2000," discusses the changes that have occurred in the world of work and the consequent implications for employers, educators, and parents of the children who will become members of tomorrow's workforce. The report further addresses the kinds of competencies, skills, and personal qualities people must have or acquire in order to become effective workers in an effective workforce.

The national anxiety about workforce quality that motivated these initiatives was felt acutely with regard to the private sector, but equally strong fears were expressed about the Federal Government. In 1988 OPM published the Hudson Institute's study "Civil Service 2000," which warned that the Federal Government faces a "slowly emerging crisis of competence" concerning the quality of its workforce. Among the points made in the study were that the skills needed by Federal workers on average are at a higher level than those of the workers in the Nation as a whole, and that the Federal Government will require

[1] U.S. Department of Labor, the Secretary's Commission on Achieving Necessary Skills, "What Work Requires of Schools," June 1991.
[2] U.S. Department of Education, "America 2000: An Education Strategy," April 1991.

even more highly skilled workers over the decade of the 1990's.[3] The workforce quality issues before the Federal Government become even more critical when seen against the backdrop of the kind of national concern about declining skills, abilities, and educational achievement that generated SCANS and "America 2000." The Federal civilian workforce comprises 3 million employees in more than 800 different occupations in 100 different agencies. The mission of the Federal Government is complex and varied, and its workforce diverse and dynamic. Consequently, the Federal Government must aggressively compete with the private sector and with state and local governments for its share of workers with the requisite skills and abilities to carry out its multi-faceted missions.

In what some predict will be a tightening labor market starting in the late 1990's, the Federal Government, with its relatively high skill level requirements, stands to face increasing competition for a narrowing pool of potential applicants. Studies by the Merit Systems Protection Board, the National Academy of Public Administration (NAPA), the National Commission on the Public Service, and the General Accounting Office (GAO) during the 1980's reiterated the popular belief in a shortfall between the capabilities the Government needs in its workers and the capabilities readily available in the labor market. Many believe that the absence of pay comparability between private and public sector organizations, along with a deteriorating image of Federal employment, could further restrict the pool of talented job candidates and decrease the number of employees committed to remaining in the Federal workforce. The reforms enacted as part of the Federal Employees Pay Comparability Act of 1990 are intended to address the impact of pay differences between private and public sector organizations. It is, however, too early to assess the impact of the reforms on retention and recruitment and, in turn, on workforce quality.

GAO has also suggested that one reason for deficiencies in Government programs and services is the Federal Government's "inability to consistently assure the quality and improve the effectiveness of its workforce through successful recruiting, competitive pay, competent leadership, and improved performance management. . ."[4] However, efforts by interested policymakers over the years to promote changes in the personnel and benefits systems in order to enhance recruitment and retention of high caliber employees have been met with the legitimate, although formidable, question: Where are the *hard data* showing that the quality of the workforce is eroding? As observed by the authors of the NAPA report on the challenges facing the civil service, "It is true that building a case for the proposition that such erosion is taking place is no easy task. Systematic evidence to confirm or deny the proposition simply does not exist."[5] Based on an array of anecdotal data, the erosion is perceived to be real. Discovering whether that perception is justified by the facts is the tough job that the Government must confront.

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[3] The Hudson Institute, "Civil Service 2000," a report prepared for the U.S. Office of Personnel Management, June 1988.

[4] U.S. General Accounting Office, "The Public Service: Issues Affecting Its Quality, Effectiveness, Integrity and Stewardship," September 1990, p. 4.

[5] National Academy of Public Administration, "The Quiet Crisis of the Civil Service: The Federal Personnel System at the Crossroads," Washington, DC, December 1986, p. 5.

The Move Toward Assessing Workforce Quality

During the 1980's, the abundance of negative anecdotes and the absence of credible data to support policy recommendations began to stimulate action. In early 1986, the staff director and chief counsel for the Subcommittee on Civil Service, House Committee on Post Office and Civil Service, asked GAO whether a methodology could be developed for effectively measuring and evaluating the quality of the civil service. GAO responded that this could indeed be done. Later that year, the Chairman of the House Committee on Post Office and Civil Service formally requested that GAO determine the feasibility of measuring both the quality of the Federal workforce and any changes occurring over time. GAO also was asked to provide a design for a research program, if such measurements were proven to be feasible. The response to that request was a report released in August of 1988, entitled "Federal Workforce: A Framework for Studying Its Quality Over Time." The report suggested a means for providing policymakers with aggregated descriptive data on the quality of the Federal workforce over time. It suggested that the evaluation include those who are entering the Federal workforce, changes in the incumbent workforce over time, and those who leave Federal jobs. It further suggested that either OPM or MSPB or both could administer the quality assessment, and that an advisory board consisting of experienced personnel officials, managers from the public and private sectors, and individuals representing users of workforce quality data could be helpful to the quality assessment process.

Committee Establishment, Structure, and Processes

Progress continued when, in early 1989, OPM and MSPB jointly sponsored a conference focused specifically on workforce quality assessment. (Both agencies had already begun the process of data collection in this area.) The conference brought together over 100 people from a broad spectrum of public, private, and nonprofit environments to share their views. The conference reinforced the value of merging the perspectives of a wide range of individuals inside and outside the Federal sector in addressing the increasingly critical assessment issue. Following the conference the two agencies jointly established an advisory committee, under the Federal Advisory Committee Act, to review workforce quality assessment efforts, to advise as to their interpretation, and to suggest alternative approaches and interventions.

During its 2-year term the Advisory Committee on Federal Workforce Quality Assessment reviewed the various workforce quality assessment efforts undertaken by the Federal Government, including the assessment model proposed by GAO, studies of workforce quality in specific occupations, and a variety of related research. The Committee advised on the methodology for specific OPM and MSPB studies, and considered various actions to improve workforce quality that were contemplated and implemented in private and public sector organizations. The

Committee also provided advice on the elements of an overall methodology for assessing the quality of the workforce over time, lending assistance in OPM's development of a quality assessment model. Five subcommittees were formed to assess the major components of this model: (1) individual attributes, (2) environmental forces and organizational processes, (3) individual outcomes, (4) team outcomes, and (5) organizational outcomes. The information developed by these groups and reported to the Committee as a whole contributed to the formulation of the Committee's advice on specifics of the workforce quality model as well as Committee recommendations on other relevant issues.

Committee Review of Workforce Quality Research

In surveying the available body of knowledge about Federal workforce quality assessment, the Committee examined a number of important studies that influenced the advice it provided MSPB and OPM during its 2-year term. This research also formed the basis for deliberations that led to Committee recommendations regarding the future course of Government assessment efforts and workforce quality management.

The Committee found that while recruiting and retaining highly qualified employees has long been a general objective of the Federal civil service system, attempts at actual workforce quality assessment are a relatively recent undertaking, driven, in large part, by questions about the Government's ability to produce high-quality products and services. Private sector workforce quality assessment methods, which can rely on measuring profits or a product's degree of conformance with an internal or external standard, are frequently not applicable to government, especially on a broad basis. Particularly at the Federal level, the number and diversity of the Government's products and customers, along with the absence of profit and competition, make this sort of assessment very difficult. One approach is to measure the quality of a key *input* to the product: the workforce. A quality product will not be produced without quality employees. Of course, a highly qualified workforce will not *alone* be sufficient to guarantee quality outcomes; work environment, work systems and processes, leadership, customer expectations, and other elements are critical, too. Nevertheless, the quality of the workers is an essential ingredient in assuring quality products and services.

While there is currently no single, universally accepted way to measure this key input, one widely used tactic is to understand what factors may indicate the presence or absence of a quality workforce. The approach that the Committee found has been pursued by OPM, MSPB, and others involves first determining who are the high-quality employees, and then identifying potential indicators that correlate with employee quality (such as grade point average, test scores, specialized skills, professional certifications, and education level). Once these indicators are identified, comparisons of workforce quality can be made to other groups, such as those in the private sector. Much of the Government's workforce quality research has used this approach or variations on it.[6]

[6] See appendix A for a discussion of a workforce quality model that broadens the definition of workforce quality to include measures of environmental forces and the performance levels of individuals, teams, and organizations, in addition to individual employee attributes.

The following are descriptions of some of the OPM and MSPB projects and related research which have been a focus of the Advisory Committee in carrying out its mandate to review and make recommendations on the adequacy of Federal workforce assessment efforts. Several workforce quality assessment projects outside OPM and MSPB also are addressed.

Studies of Current Employees

Both OPM and MSPB are involved in studies of incumbents in selected occupations. The basic approach is to:

- Survey samples of current employees in these occupations to determine if they have the skills and abilities required for high-level job performance;

- Survey supervisors about the quality of these employees;

- Identify indicators (level of education, grade point average, etc.) that may be related to the high performers;

- Determine whether the quality indicators of Federal employees change over time and, if feasible, compare the Federal workforce, in terms of those indicators, with non-Federal groups.

Among the projects that have used this general approach is an MSPB study of first-line supervisors. The study found that the quality of first-line supervisors is viewed differently by different groups of people. First-line supervisors were seen as being of fairly high quality by themselves and their bosses, although nonsupervisory employees viewed them much less favorably. The study also shows that job requirements (such as setting priorities, scheduling work, and assessing employee performance) as well as quality levels for first line supervisors are very similar across the occupational groups studied. These findings are particularly encouraging in light of efforts to develop quality measures applicable on a larger scale.[7]

OPM found positive results in its recent studies of the quality of employees in the engineering, scientific, and computer fields.[8] The studies reveal little difference in the quality of certain indicators (such as grades, class standing, highest degree attained), or in measures of job success (such as publications, patents, and performance appraisals) between recent hires and those hired in the 1960's, 1970's, and 1980's. These studies, however, can be viewed only as preliminary because of the absence of data from employees who have left Federal service. In the study, employees and their supervisors consistently expressed the belief that the quality of those who had left was higher than the quality of those who remained. Planned longitudinal studies will provide the objective data needed either to support or contradict this belief.

The quality picture is similarly inconclusive in another current employee study

[7] U.S. Merit Systems Protection Board, "Federal First-Line Supervisors: How Good Are They?" March 1992.

[8] U.S. Office of Personnel Management, "Scientists and Engineers in Civilian Agencies: Study of Quality-Related Factors (1990)," Report Number WQR 91-01, March 1991, and "Computer Specialists in Federal Agencies: Study of Quality-Related Factors (1990)," Report Number WQR 91-02, June 1991.

conducted by MSPB.[9] In this project several surveys were administered to look at the quality of the procurement workforce from the perspective of employees in the procurement series, their supervisors, SES members whose organizational missions depend on the procurement function, and private sector contractors who deal with Federal procurement workers. The study found that both procurement specialists and their supervisors believe that the quality of the procurement workforce is adequate in many areas. Likewise, SES clients of the procurement workforce found the work performed by contracting specialists to be acceptable, and private contractors expressed the belief that awards are determined fairly and appropriately.

However, while supervisors and employees were positive about the ability of procurement workers, and workforce quality appeared adequate as measured by indicators such as education and length of experience, the study found several areas that need attention. Supervisors and SES members tend to view contracting employees as somewhat lacking in creativity and too prone to apply rules in a rigid fashion. There is also a widespread feeling, among both contracting personnel and their supervisors, that more training is needed in almost every aspect of the procurement employees' work.

This combination of positive and negative findings suggests that while the quality of the workers continues to be stable, the complexity and difficulty of the work itself has increased markedly. Further, the increase in complexity of jobs is by no means confined to the procurement area. The fourth edition of the Department of Labor's "Dictionary of Occupational Titles," published in December 1991 and listing over 12,000 occupations, reflects a growth in technical jobs, the addition of technical requirements to existing jobs, and a general increase in level of job complexity. This continuing—and often rapid—change in the nature of work may have significant implications as assessment of workforce quality proceeds. It will be more important than ever, for example, to evaluate segments of the workforce to determine worker characteristics required for successful performance and to identify training and development needs of the current workforce.

Quality of Applicants and New Hires

The Advisory Committee also reviewed what the Government is learning about applicants and people newly hired for Federal jobs. Is the quality of Federal job seekers improving, declining, or remaining the same both over time and compared to non-Federal workers? OPM is addressing these issues in a long-term program of data collection to measure the quality of applicants for Federal employment. The approach is to administer a survey to those who apply, or have just been hired, for targeted occupations. Survey items include educational level, grade point average, work experience, performance ratings, and reasons for choosing to apply to the Federal Government. Automated data sources will provide additional data such as examination scores. Periodic occupational baseline and trend reports will describe these data as they are collected.

The first baseline report, "Applicants to the OPM Clerical Examination," was issued in March 1990. The report includes preliminary quality indicator data showing, for example, that the applicants were quite well-educated, with almost half reporting at least some college; 11 percent were college gradu-

[9] U.S. Merit Systems Protection Board, "Workforce Quality and Federal Procurement: An Assessment," July 1992.

ates. A followup study currently underway includes selection test data on applicants and will analyze the relationship between quality indicator data and job performance.[10]

"Quality of PAC Hires," another OPM report, compares quality indicator and job performance data on over 8,500 employees newly hired under the various recruitment methods used between 1983 and 1986 for professional and administrative career positions throughout the Federal Government. (Although these data were collected by OPM prior to implementing the applicant data collection effort, the study was used to help design that program.) The data showed that average performance ratings were higher, although not greatly, for employees who entered from certain sources, including co-op programs, Veterans Readjustment Act appointments, inservice placement, outstanding scholar programs, and OPM written tests. The data also revealed that quality of education (e.g., grade point average) and self-reports of past job performance were positively related to job performance.[11]

Another baseline study looked at the quality of applicants to the Administrative Careers with America (ACWA) examinations, which cover professional and administrative occupations at grades 5 and 7. The study covered 163,051 applicants from June 1990 through June 1991, the first year the examination was used. The research revealed a fairly well-educated applicant group: almost half indicated that they had a bachelor's degree and an additional 20 percent reported that they had some graduate education or a graduate degree in addition to their bachelor's degree. Over 90 percent reported having completed at least some college. Many were already employed in the private sector or the Federal Government (a quarter of them already had Government jobs); and most of them had some qualifying work experience. The information derived from this study provides a foundation for assessing changes in the quality of ACWA applicants in years to come.[12]

Research conducted by the Department of the Army focused on those who entered the agency through its intern program. The Army designed its intern intake survey to produce a profile of past and current interns based on a variety of quality measures. The data collection instruments used include two general cognitive ability tests that permit the Army to compare its civilian interns to their military and private sector counterparts. A third instrument is a background form that includes demographics, educational information, internship information (e.g., the occupational area, date of entry, and type of recruitment used to bring the intern on board), and interns' opinions about their internships. The quality measures that the Army collects will be linked, through an automated civilian forecasting system, to performance, progression, and retention data, in much the same way that such linking has been done to track the quality of the military force. The data the Army has collected on employees who entered internships from 1980 through 1989 show a civilian workforce whose quality has *not* shown the kind of decline that the anecdotal evidence ascribes to the Federal Government. Judged by tests of cognitive ability, grade point average, and measures of education quality, the quality of the Army intern population has remained generally constant.[13]

[10]. U.S. Office of Personnel Management, "Applicants to the OPM Clerical Examination," Report Number WQR 90-02, August 1990.

[11] U.S. Office of Personnel Management, "Quality of PAC Hires," Report Number WQR 90-01, June 1990.

[12]. U.S. Office of Personnel Management, "Quality of Applicants to the Administrative Careers with America (ACWA) Examinations (ACWA Groups 1-6): June 1990-June 1991 Baseline Report," Report Number WQR 92-01, June 1992.

[13] This information is derived from a paper by Diane M. Ungvarsky and Richard A. Lilienthal, "Quality in Government: The Army Intern Intake Survey," presented at the 1991 International Personnel Management Association Assessment Council Conference, June 23-27, 1991, Chicago, Illinois, and from briefing charts provided by The U.S. Total Army Personnel Command, Civilian Personnel Management Directorate.

Federal Employees Who Leave the Government

In addition to considering characteristics of current employees, new hires, and applicants to the Federal service, the Advisory Committee examined related issues that contribute to the overall picture of workforce quality. One of these important elements is turnover in the Government. How many employees are leaving the Federal Government, why are they leaving, and are they employees the Government would like to have kept? MSPB has completed a two-part study of this issue. The first part examined data from OPM's Central Personnel Data File (CPDF). The second analyzed the results of a Government-wide exit survey that addressed *why* these people left. Performance ratings of exiting employees were available among the data from both the CPDF study and the second study (the self-reported data). The first study showed that a sizable number of those who resigned had outstanding performance ratings. The second showed that the outstanding employees had reasons for leaving that differed from those of employees with lower ratings. ("Outstanding" employees, for example, were more likely to cite compensation and advancement as reasons for resigning than were employees rated "fully successful.") Both studies provide baseline data for the study of turnover and suggest strategies for reducing the loss of the most valued employees.[14]

Turnover was also the subject of a 1987 Department of Defense (DOD) study intended to discover whether higher aptitude professional and administrative employees were more likely than others to leave DOD for the private sector.[15] Defense surveyed a group of professional and administrative employees who entered DOD during a 6-month period, and followed their job-related behavior over time. Aptitude was measured using self-reported highest level of education, self-reported high school and college grades and, where possible, SAT scores (obtained from the Educational Testing Service). Initial findings suggested that the more educated and capable employees saw greater career opportunities for themselves in the private sector and intended to take advantage of them. However, when DOD followed up this study with another in June of 1989, analysis of the data collected did *not* support the contention that these "better" employees were more likely than others to leave the Department. The DOD researchers found, among other things, that education was not significantly related to retention when all other relevant variables were taken into account; that employees with higher math aptitude scores were *more* likely to remain with the Department; and that engineers were more likely than other professional and administrative employees to stay with DOD.[16]

Training and Development Needs

A concern common to both the public and private sectors is the possibility that the skill level of the workforce is declining in relation to the skills required by jobs. Bureau of Labor Statistics projections continue to predict the growth of jobs that will require highly skilled and educated workers. "Civil Service 2000" warned of a significant and growing skills gap as we approach the 21st century. More recently, others have challenged such forecasts and suggest that the high skill requirements predicted by the

[14] U.S. Merit Systems Protection Board, "Who is Leaving the Federal Government? An Analysis of Employee Turnover," August 1989 and "Why Are Employees Leaving the Federal Government? Results of an Exit Survey," May 1990.

[15] U.S. Department of Defense, Defense Manpower Data Center, "Civilian Professional and Administrative Employees in the Department of Defense: Baseline Data on an Incoming Cohort," October 1987.

[16] U.S. Department of Defense, Defense Manpower Data Center, "Factors in the Retention of DoD Civilian Professional and Administrative Employees: Follow-up on an Entering Cohort," May 1990

Hudson Institute have been overstated.[17] Credible assessments of workforce quality over time could, of course, be very useful in illuminating both sides of this debate, and occupational studies such as those examined by the Advisory Committee will continue to be useful in this regard. The MSPB study of procurement specialists and the OPM study of computer specialists, for example, set baselines so that researchers can in the future compare segments of the workforce to arrive at answers about changes in skill requirements. Further, the studies identified potential training needs among workers in these occupations; if the Government chooses to provide additional training to address these needs, future studies can examine the extent to which such interventions affected the quality of these segments of the workforce.

Related Research

Research that touches on many related aspects of the workforce quality situation has been carried out by MSPB through its periodically administered Merit Principles Survey. The survey was last administered in the summer of 1989 to a sample of Federal employees selected to be representative of the permanent Federal workforce according to their pay plans, grades, and employment in one of the 22 largest agencies. (Similar surveys had been administered in 1983 and 1986, allowing for longitudinal comparisons of some items.) The 1989 survey addressed a broad range of personnel issues including job satisfaction, training, supervision, and compensation, in order to take a general reading of the pulse of the Federal civil service and to look for areas that might require more indepth study. Several questions in the survey were designed to assess perceptions about the quality of the existing workforce by asking how supervisors and employees viewed the relative quality of current, past, and recently hired workers, and whether employees believed they were receiving appropriate training. The study found that employees generally viewed their fellow workers in a positive light, but they saw the quality of individuals who had joined the work group within the previous 4 years as somewhat lower than the quality of employees who had left. Supervisors rated applicant quality less favorably than they had in the 1986 survey. With regard to the training issue, a significant number of employees who indicated that they had not changed jobs in the preceding 3 years, said that the nature of their work had changed substantially. At the same time, almost a third of the group who had not changed jobs also said that they had not received the training they need to keep pace with changes in their work.[18]

Another area of research reviewed by the Advisory Committee was an MSPB study examining where the Federal Government stands today on providing certain family benefits that appear to be increasingly important in attracting and retaining a quality workforce. The study looked at child care, elder care, alternative work schedules, part-time employment and job sharing, flexiplace programs, leave-sharing, and cafeteria benefits. One important finding derived from this research is that the Government has not capitalized fully on some of the benefits it offers (e.g., alternative work schedules and flexiplace), because it has failed to use the availability of such programs as an inducement in its recruitment efforts.[19]

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[17] Economic Policy Institute, "The Myth of the Coming Labor Shortage: Jobs, Skills and Incomes of America's Workforce 2000," Washington, DC, July 1991.

[18] U.S. Merit Systems Protection Board, "Working for America: A Federal Employee Survey," June 1990.

[19] U.S. Merit Systems Protection Board, "Balancing Work Responsibilities and Family Needs: The Federal Civil Service Response," November 1991.

Federal/Non-Federal Comparisons

In order to determine if the Federal Government is succeeding in recruiting its fair share of high-quality applicants, quality indicators developed through projects such as those described above will ultimately need to be compared to those of other employee groups. For this reason OPM has also been collecting private sector data to compare the quality of Federal civil service incumbents and applicants with the quality of those in the private sector for given occupations. Initial efforts focused on secondary data sources such as those available from private trade organizations, the Census Bureau, and the Bureau of Labor Statistics. With the help of the Society for Human Resource Management, OPM has begun a pilot study to collect primary data for the computer specialist occupations. Currently underway at four private companies (TRW, Walt Disney World, Textron, and Federal Express) is a survey of incumbents of computer specialist positions similar to those in the Federal Government. The results of this survey will suggest whether such Federal/non-Federal comparisons are feasible and whether data collection should continue.

Closing the Information Gap

Although there has, until recently, been little Governmentwide data to confirm or refute fears about the caliber of the Federal workforce, the Committee was heartened by the increase in available information resulting from projects undertaken by MSPB, OPM, and others. Positive findings about the quality of individual groups such as scientists, engineers, and procurement and computer specialists are also very encouraging. Much more work is necessary, however, particularly in the form of longitudinal research, to give us a comprehensive picture of workforce quality throughout the Government.

Completely filling in the information gap is a venture that will require many more decisions about what data should be collected, how it should be interpreted, and what the policy implications may be. The Advisory Committee intends for its work to supplement the progress that already has been made in these areas and in assessing specific segments of the workforce. The recommendations that follow are designed to provide Government decisionmakers with options that will lead to workforce assessment programs that can be applied throughout the Government and interventions that will result in workforce quality improvements.

Advisory Committee Recommendations

The Committee has developed a number of recommendations that we believe can help the Government further refine its approach to workforce quality management and take steps to improve quality now and in the years ahead. The recommendations are presented in this chapter. They are categorized around the four major points discussed by OPM Director Newman in her remarks to the Advisory Committee on May 23, 1991. The four points are related to defining workforce quality, developing the tools to assess workforce quality, determining what is required to achieve and maintain a quality workforce, and followthrough. It is understood that departments and agencies should work with employees and their labor organization representatives to obtain the best results at each stage of this process. Each of the categories is explained more fully in the four sections that follow.

Defining Workforce Quality

A fundamental element of workforce quality assessment is determination of what is meant by workforce quality. The Committee believes that workforce quality is broadly defined in terms of three interrelated components—inputs, organizational processes, and outcomes. The quality of inputs (i.e., individual attributes, environmental forces) has an impact on eventual outcomes. Additionally, outcomes are the result of how organizational processes are carried out, given certain inputs. Clearly, in defining workforce quality the interaction of inputs, organizational processes, and outcomes is crucial. In keeping with this broad perspective, in our recommendations the term "workforce quality" portrays the organization as a dynamic system that continually monitors changes in its inputs and structures its organizational processes accordingly to improve outcomes. Thus, a model is needed that includes all these components and reflects their interaction in order to guide efforts to assess the quality of the Federal workforce.

Recommendation 1: The workforce quality assessment effort in the Federal Government should include adoption of a broad definition of workforce quality that recognizes the interaction of individual attributes of workers, environmental forces, organizational processes, and individual, team, and organizational outcomes.

The complex and multifaceted nature of workforce quality dictates that a comprehensive definition be used in thinking about quality issues and acting on them. Such a definition provides a common understanding from which assessments of workforce quality can be made and furnishes a foundation from which improvements to workforce quality can occur. The Committee defines workforce quality as the interaction of inputs, processes, and outcomes. The inputs consist of individual attributes and environmental forces. These are influenced by organizational processes and by each other to produce individual, team, and organizational outcomes.

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Early models of workforce quality by OPM and others have acknowledged that a complete definition of workforce quality needs to be broad, and include factors such as the individual worker, the overall organization and its processes, and the forces affecting the organization. In practice, it is likely that actual measurements of workforce quality have focused too narrowly by considering only certain aspects of these models, or by ignoring important interactions between elements of the models. Models need to reflect all the components included in a broad definition so that measurements can take into account the complex and dynamic nature of workforce quality.

The Advisory Committee recommends adoption of a model of workforce quality that embraces the complexity of these issues. This model, described in appendix A, is referred to as the workforce quality assessment and improvement model. It depicts organizations as living systems that must continually deal with internal changes as well as external forces (which are harder to control), and then develop ways to respond to them. The model stresses that organizations have the ability to define and assess workforce quality against explicit standards so that continuous improvements to quality can be achieved.

The actual measurement of workforce quality in this model is broken down in terms of three major components—inputs, organizational processes, and outcomes. Inputs consist of attributes possessed by the individual worker and environmental forces operating within or outside the organization. Organizational processes consist of both formal and informal programs, procedures, and strategies that are used to influence the quality of inputs and outcomes. Formal methods include strategic objectives and administrative procedures, as well as human resources programs such as employee recruitment, selection, and training systems. Informal methods include organizational culture and climate variables such as leadership style, communication systems, reward and feedback mechanisms, and management and supervisory techniques.

The third major component of the model's approach to workforce quality measurement—outcomes—refers to a variety of effectiveness and attitudinal variables relating to performance, productivity, and job satisfaction. Outcomes can be assessed at three levels of an organization—the individual, work teams, and the organization as a whole.

To reinforce the dynamic nature of workforce quality, the model reflects the interrelationships within and among inputs, organizational processes, and outcomes. Probably the model's most important implication is that achieving a quality workforce is a never-ending process. Organizations must continually assess their levels of workforce quality in light of changing circumstances and take steps to stimulate continuous improvement.

Recommendation 2: Comparisons between Federal and non-Federal quality should be included in the Federal Government's workforce quality assessment effort.

An important element in the Government's effort to assess the quality of its workforce is the collection of data about applicants and incumbents in selected occupations. To arrive at meaningful interpretations of such data it is necessary to establish reference points for comparison. One way of

generating comparisons is to collect similar data over a period of time and identify and analyze trends, a technique that the agencies discussed in chapter 2 have been using in their approach to quality assessment. The Committee believes that in order to enrich this process, and make interpretations even more meaningful, data about private sector employees also should be collected. Comparisons over time, and between private and Government employees, would add greatly to what we know about Federal workforce quality, and tell us if and where it needs to be improved. For example, were a study to suggest that Federal workforce quality had declined over time, the conclusions and recommendations for action might be different if it were known that the private sector had experienced a similar or even greater loss of quality. Without private sector data, the Government cannot make all the comparisons that contribute to making informed decisions and recommendations about its own workforce.

The Office of Personnel Management currently is conducting a study of private sector computer specialists to collect data that will be used for comparison with data already collected on Federal computer specialists. The Committee believes that if this study yields useful information and provides evidence that such efforts are feasible, private sector data collection should be expanded.

Data should be collected in private companies in the same occupations for which data collection in Federal organizations is planned. Further, information collected in the private sector should include data about various aspects of the model. That is, the effort should focus not only on environmental forces and quality indicators for individuals, but also should include consideration of organizational processes and team or organizational outcomes.

Private sector employers should be persuaded to allow their organizations and employees to participate in these studies. In encouraging private sector participation, the Government should stress the importance of these studies for assessing Federal workforce quality and should highlight the direct impact of good government on the organizations' activities and on the public at large.

The Committee acknowledges that data on organizational processes and on team and organizational outcomes are usually more difficult to collect than are data on quality indicators for individuals. The Committee further recognizes that carrying out private sector studies can present a number of difficulties, including establishing that the jobs are comparable, considering the effects of any pay differences between Federal and private sectors, and evaluating possible differences in customer needs. Nevertheless, if the Government wants a workforce that is world class, that compares favorably to any workforce outside the Federal Government, then the Government needs to know much more about those outside workers and situations than it does today. Private sector data collection is a good starting point toward that end.

Recommendation 3: Department and agency heads should be charged with identifying their internal and external customers, and, in the light of legal, technical, and social requirements, should set explicit standards of production and service quality.

Every organization has multiple customers, or stakeholders, because every organiza-

tion exists to serve multiple constituencies, each of which may have different requirements. These stakeholders exist at many different levels—some within the organization, some who are the immediate consumers of the products and services delivered, and still others in the larger society who have no immediate connection to the organization.

The Committee believes that it is essential for an organization to identify all its customers, both internal and external, since that very act makes the multiplicity of the stakeholders tangible. Department and agency heads should involve managers, employees, and employee unions to assure that no customers are overlooked in the identification process. Once the various stakeholders have been identified, their particular stake in the organization can also be specified. This step permits explicit standards of production and service quality to be set for each stakeholder or category of stakeholder.

Invariably, however, two outcomes immediately become apparent when organizations go through this process: (1) different stakeholders have conflicting and competing demands; and (2) legal, technical, and social issues come into play that affect the extent to which it is possible to satisfy these demands. The challenge for any organization is to meet customer requirements while adhering to legal requirements, operating within technical standards, and meeting social demands.

After stakeholders are identified and their needs and requirements are recognized, organizations must estimate ways of balancing competing requirements and conflicting goals—given legal, technical, and social requirements and limitations. One solution that can be adopted to address this difficult third step is establishing formal and informal "contracts" between the organization and various stakeholders. These contracts will be in the form of implicit or explicit agreements about what standards of production and service quality are possible.

It becomes apparent in the process that the relative hierarchy of an organization's constituencies is not static. Meeting a given stakeholder's demands becomes more or less important depending on the specific situation, existing environment, and standards being applied—in short—the timing of the demands. The principle here is that merely identifying a hierarchy for product and service quality will be insufficient because, as issues and situations change, the hierarchy may require adjustment. It is, then, important for departments and agencies to plan for a variety of scenarios and gauge the degree to which these scenarios affect the relative importance of meeting various constituency needs and requirements.

Developing the Tools to Assess Workforce Quality

Once workforce quality has been defined, the Government needs to develop tools to assess the various aspects of that quality. In keeping with the broad definition of workforce quality that the Committee recommends, tools should be developed to apply to the various elements of the workforce quality model—the worker, the work process, and the products and services accomplished through individual, team, and organizational effort.

Recommendation 4: OPM should institutionalize its data collection program of longitudinal research on quality and provide Government decisionmakers with the results. OPM should also encourage depart-

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ments and agencies to do their own studies, providing technical advice and instruments related to the various aspects of the workforce quality model.

In preparing for the intense competition for scarce workers as projected in the report "Civil Service 2000," the Federal Government has created a number of programs to attract, hire, and retain employees. The introduction of these programs has necessitated the development of objective evidence about workforce quality in order to evaluate their effectiveness. OPM, GAO, and others recognized the need to build a data base to answer fundamental questions about workforce quality, and envisioned the collection of quality indicators such as education, grades, and experience, along with job performance data, for employees in selected occupations.

OPM's current quality assessment program includes not only studies of incumbents in selected occupations, but also broad data collection from applicants for critical white-collar jobs in all occupational categories. In proceeding with this effort, OPM takes advantage of its multiple data collection systems and research staff.

OPM incorporates the collection of applicant data into the job application and selection process. Candidates are asked questions about their previous education and experience, skills, interest in public employment, and other background information. The questions include as possible indicators of workforce quality the individual characteristics proposed by GAO in its 1988 report on workforce quality.[20] These are supplemented with items developed from OPM's experience with the prediction of job performance as part of its examination development responsibilities. Incumbent studies include questions about occupationally specific skills and abilities, as well as environmental factors and organizational processes. Both applicant and employee studies will be repeated at regular internals to develop information on trends. In addition, groups of applicants will be tracked over time to compare the quality of those hired and those retained in the short- and long-term.

The Committee believes that tracking and assessing changes in the quality of the Federal workforce over time will not be possible without the continued systematic collection of uniform data. Therefore, the Committee endorses OPM's plans to prepare trend reports, comparing the quality of applicants for particular occupations over time, and to compare data for applicant groups with data for those actually hired and those retained. These analyses will help to tell us how successful the Federal Government has been at hiring and retaining the best qualified applicants.

The Committee also believes that departments and agencies need to carry out their own studies in order to assess at a local level the same variables that OPM is assessing on a Governmentwide level. These studies are necessary because of possible geographical and agency differences in workforce quality. Approaching the question in both specific and global ways will provide a fuller picture of the situation at a given time, as well as changes over time. The Committee recommends that OPM provide technical guidelines and assistance to agencies to help them perform such localized studies, and make its own instruments and data available for agencies to use or adapt for the studies. These steps will result in a greater number of localized studies and contribute considerably to the technical adequacy of the entire assessment program.

[20] U.S. General Accounting Office, "Federal Workforce: A Framework for Studying Quality Over Time," August 1988.

To ensure consistency and economy of effort, these studies should be coordinated by a single entity such as a council of organizations active in workforce assessment. Recommendation 14 addresses the make-up and suggested activities of such a group.

Recommendation 5: OPM should continue research to develop measures that go beyond traditional assessment of cognitive abilities to encompass all of the attributes that predict high-quality work and retention at practical levels.

Effective personnel selection is critical for maintaining an effective workforce. The Committees believes that a useful reference point for the development of more broadly effective selection methods is the report of the Secretary's Commission on Achieving Necessary Skills (SCANS). The Commission identified five kinds of competence and a foundation of skills and personal qualities that are needed in today's workplace. In brief, these competencies and foundation skills and attributes as defined by SCANS are as follows.[21]

■ **Competencies**—effective workers demonstrate their ability to use:

- Resources—managing time, money, material, space, and staff

- Interpersonal skills—working on teams, teaching others, serving customers, leading, negotiating, and working well with people from diverse backgrounds

- Information—acquiring, evaluating, organizing, maintaining, interpreting, and communicating information, and using computers to process information

- Systems—understanding social, organizational, and technological systems, monitoring and correcting performance, and designing or improving systems

- Technology—selecting equipment and tools, applying technology to specific tasks, and maintaining and troubleshooting technologies

■ **The Foundation**—competence is developed from a three-part foundation:

- Basic skills—reading, writing, using mathematics, speaking, and listening

- Thinking skills—thinking creatively, making decisions, solving problems, building mental models, knowing how to learn, and reasoning

- Personal qualities—individual responsibility, self-esteem, sociability, self-management, and integrity

The Advisory Committee strongly encourages OPM to continue research to assess a range of individual attributes that are important for job success and retention, such as the personal qualities and interpersonal abilities listed above. Practical ways should be developed to integrate these competencies into the hiring, development, and promotion processes. The Individual Achievement Record, used in the Administrative Careers With America examinations, is a major advance toward the assessment of the whole person that increasingly is being recognized as important in correctly matching people with the jobs they will do best. Continuing research, such as OPM's current work on assessment of social skills, is recommended to provide the kinds of assessment methods needed as tools in building a more service-oriented Federal workforce.

[21] U. S. Department of Labor, the Secretary's Commission on Achieving Necessary Skills, "What Work Requires of Schools," June 1991. pp. xvii-xviii.

Determining What Is Required to Achieve and Maintain a Quality Workforce

This category involves using quality assessment research results to identify relationships between specific factors (e.g., compensation, awards systems, flexible work arrangements) and workforce quality. It includes the development of research reports that may identify the need for policy changes and specific actions based on the research.

Recommendation 6: Because quality is a concept applicable to the entire range of human resources management activities, department and agency heads, with guidance from OPM, should determine how the principles of the quality assessment and improvement model can be applied to their human resources management activities.

Recommendation 1 discussed the importance of departments and agencies adopting a broad definition of workforce quality and recommended a model that provides a framework for defining and managing workforce quality. The model depicts workforce quality as the result of how an organization manages its inputs and outcomes through its various organizational processes.

The Committee believes that managing inputs and outcomes to achieve and maintain workforce quality is the responsibility of the heads of individual departments and agencies, and components of agencies, i.e., heads of bureaus, offices, and commands. While the quality assessment programs of OPM and MSPB are designed to provide general assessments of workforce quality and, to some extent, quality data in specific areas, it is unrealistic to believe that Governmentwide prescriptions for *improving* workforce quality would always be compatible with the specific needs of an organization. Because Government products and services differ greatly from agency to agency, it is up to department and agency officials to understand how their specific human resources activities can be managed toward continuous improvement in workforce quality.

A logical first step for departments and agencies in assessing workforce quality is to examine their inputs and outcomes against *explicit* standards of quality, both internal and external. The quality assessment and improvement model provides general guidance on how inputs and outcomes can be viewed and measured. The concept of defining and using explicit internal and external standards is important since it gives organizations a way to judge levels of quality. Once organizations have made assessments about current levels of quality, they must consider the role and impact of their processes in managing inputs and outcomes to achieve quality. In the context of the model, various examples of organizational processes can be considered.

Organizational processes can be used to manage inputs in various ways, depending on the type of input. The first type of input shown in the model consists of the attributes of individual workers. Certainly, recruitment and selection programs, when implemented effectively, can assist in attracting and selecting job applicants with the necessary skills, abilities, and personal characteristics to meet current and future needs of the organization. Because worker attributes can also be dynamic in nature, organizational processes that improve the attributes of the existing workforce, such as training and development programs, are also important. Similarly, the degree to which certain organizational culture

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and climate variables such as leadership style, communications mechanisms, and reward and recognition systems are implemented can affect the quality of organizational outcomes and the retention of a quality workforce.

The second type of input consists of the environmental forces operating on the organization. These forces are the conditions and circumstances affecting the organization and can include the current political environment, economic forces, level of resources provided, statutes and regulations, and various perceptions held by the public and other influential entities. An organization that is able to structure its programs to be compatible with these environmental forces is more likely to achieve and maintain greater levels of workforce quality. Organizations should take opportunities to perform periodic assessments of the environmental forces that affect them.

Organizational processes can also be used in a variety of ways to manage the various types of outcomes. Individual outcomes can be measured in terms of job performance, training success, job progression, awards and commendations, job satisfaction, and job turnover. Processes to improve individual performance include formal performance appraisal methods and formal and informal reward and feedback systems. In some cases the organizational processes used to manage the quality of outcomes are the same ones used to manage inputs. For example, training programs used to develop and improve worker attributes (the input) should also assist in improving individual levels of performance (the outcome).

Team outcomes consist of team performance, productivity, and group satisfaction measures. Many of the principles found in the processes that manage individual outcomes can apply to teams. Systems for rewarding, training, and communicating, for example, are important to managing team outcomes. Because of the recent attention the Federal Government has given team approaches toward work (total quality management initiatives, for example), it will become increasingly important for departments and agencies to consider ways to manage team outcomes.

Organizational outcomes consist of two major types, productivity and service quality. Productivity outcomes are bottom-line measures that are tied to organizational goals and mission. Ideally, most of the processes that are used to manage individual and team outcomes are reflected in outcomes at the organizational level. The Department of Labor's Bureau of Labor Statistics (BLS) has taken the lead in developing generic measures of productivity for use in individual programs that measure outputs. Because of the diverse nature of the Federal Government's products and services, department heads should seek guidance from agencies such as BLS to develop ways to measure outcomes that are specific to their organizations.

The Committee recognizes that achieving workforce quality is not an easy task. At the same time, it is clear that organizations must take responsibility for managing their programs in a way that best uses their current and projected resources to reach quality-related goals. It is up to organizations to effectively structure and manage their cultures through a variety of good practices in order to support their value systems. The input of employees and employee unions is important in devising practices that the workforce can "own" in its quest to achieve quality improvements. Making improvements to workforce quality is a never-ending process, but organi-

zations that are able to assess quality in terms of inputs and outputs, and structure their organizational processes to manage them more effectively are more likely to maintain high levels of workforce quality.

Recommendation 7: **The workforce quality assessment effort in the Federal Government should include examination of the relationships between human resources management programs (e.g., compensation, benefits, training), and the productivity of individuals, teams, and organizations and the quality of the products and services they provide.**

Human resources management procedures, like all organizational practices, are (or should be) aimed at enhancing productivity and service quality. The Committee believes that it is necessary to examine the link between organizational practices and productivity and service quality because it would be desirable to develop cost/benefit analyses of the relationship. However, it must be recognized that establishing a *direct* link will be a particularly difficult task. This is true for several reasons: (a) there are many ways to define productivity and service quality, so linkages will vary depending on the definitions adopted by an organization and its customers at any given time; (b) the effects of any one function in an organization naturally interact with the effects of other functions, so isolating the effects of a single function is not possible; and (c) practices and procedures vary in the time they may take to have an effect. These three factors make assessment of relationships between human resources programs and workforce quality particularly challenging.

Nevertheless, it is clear that an implicit cost-benefit relationship exists between productivity and human resources programs. It is reasonable to expect that ignoring human resources management or any other necessary function will result in lower productivity and poorer service quality. Thus, organizations in which employees report poorer human resources practices might have higher levels of absenteeism and turnover, lower levels of "good citizenship" behavior (where people voluntarily help one another), higher levels of re-work required, less customer satisfaction, and lower productivity.

The Committee believes that departments and agencies need to include consideration of the relationships between human resources practices and procedures and productivity and service quality in their strategic planning, since it is through the organization's human resources that strategic plans are carried out. Issues such as the fit of the strategic plan to available and potential employees, the degree to which the plan will require changes in current and future training, and the effects of a strategic plan on the compensation and benefits packages all require specification *in the planning process*, not afterwards. When departments and agencies understand and identify the role human resources management plays in their productivity and service quality, and include human resources management elements as essential components of their strategic plans, rather than treat human resources issues as matters to consider after the strategic plan is adopted, productivity and service quality can be enhanced.

Followthrough

This category involves making changes and taking action based on what we have learned about what is required to achieve a quality workforce. For example, actions may include modifications in

areas such as leadership and supervision, the work environment, or attitudes about and behaviors toward Federal employees.

Recommendation 8: Departments and agencies should emphasize the connection between the quality of the work environment and the quality of individual, team, and organizational performance when carrying out training, program evaluation, and research.

Carrying out training, program evaluation, and research requires more than just looking at an organization's individuals, goals, or performance. No single aspect of an organization—its employees, its environment, its products, its teams—is isolated. All the elements influence one another, and are influenced by other forces. The work environment itself is influenced by many internal and external forces. The work environment, in turn, influences how an individual or team performs within an organization. When we explore the quality of an individual, team, or organization, or conduct training or research, we must consider the work environment and its effects on the object of our study.

The workforce quality assessment and improvement model depicts quality as being affected by organizational processes, including organizational culture and climate. Organizational culture refers to a shared way of perceiving, thinking, and feeling in relation to the group's problems, and climate refers to a shared perception of organizational policies, practices, and procedures. Much of the research on organizational culture has found that certain types of cultures enhance organizational quality or effectiveness. These include delegating, information-sharing, egalitarian, and employee-centered cultures. Additional internal organizational forces include available resources and skill requirements.

The Advisory Committee recommends that departments and agencies emphasize the connection between work environment and the quality of individual, team, and organizational performance. This connection should be emphasized when training is developed and implemented. For instance, since supervisory style can have such a critical impact on individual and team production, supervisory training should emphasize the skills and attitudes that create a positive culture and climate. Currently, the Government is stressing such factors. In a further acknowledgement of the importance of organizational processes, the Government also is emphasizing the importance of total quality management principles in the operation of departments and agencies.

The Committee also believes that future research and program evaluation cannot ignore the importance of the economic forces, statutes, and regulations, the political environment, or any other physical or operational forces that affect the quality of individual, team, or organizational performance.

Recommendation 9: Departments and agencies should emphasize the connection between the quality of leadership and supervision and the quality of individual, team, and organizational performance when carrying out training, program evaluation, and research.

In acknowledging the interrelationships and mutual influence that aspects of an organization have on one another, the Committee wishes to give special emphasis to the

impact of leadership on the Federal workforce. The quality of leadership and supervision is a particularly important factor that relates to the workforce quality assessment and improvement model. Leadership and supervision can determine the organizational culture that serves as an important part of the work environment and influences how individuals or teams perform within an organization.

Additionally, leadership and supervision can be considered an aspect of the "organizational processes" element of the model. These are the programs and procedures that maintain and influence quality. They include formal human resource management practices such as recruitment, training, and selection, as well as dynamic day-to-day processes such as assigning and directing work, employee-supervisor relationships, and motivational strategies.

The Advisory Committee recommends that when departments and agencies develop training, do research, and perform evaluations, they particularly emphasize the impact leadership and supervision have on the quality of individual, team, and organizational performance. Further, because of the crucial importance of leadership and supervision to the quality of individual, team, and organizational outcomes, the Committee endorses efforts to discover the qualities that make an effective supervisor or manager.

Several Government initiatives are contributing to increasing our knowledge about supervisors and managers. The results of the MSPB study of first-line supervisors (discussed in chapter 2 of this report) suggest some core skills that are important to supervisory success regardless of the work being supervised. Also, OPM has completed some major parts of a study of Federal supervisors, managers, and executives using surveys sent to a sample of 22,000 of them. The study investigated the roles and responsibilities of Federal supervisors and managers, the competencies needed for effective performance, and managers' special interests and needs. This research has established a continuum of executive, managerial, and supervisory behaviors and competencies to guide development of a range of products such as training curricula, selection criteria, and performance standards.[22]

The Committee believes that as the Federal Government continues research in this area, the academic research community should be encouraged to get involved. This is consistent with our earlier recommendation regarding the collection of data from the private sector. There, too, we stressed the participation of organizations outside the Government in the collection of data on all aspects of the workforce quality assessment model. We intend our emphasis on cooperative data-gathering efforts to encourage the understanding that contributions to workforce quality assessment programs can help improve the Federal workforce, lead to better government, and have a positive impact on society in general.

Recommendation 10: Department and agency heads should ensure that evaluation and reward and recognition systems emphasize delivery of high-quality services and products.

Evaluation, reward, and recognition systems need to be aligned with organizational objectives if the objectives are to be met. Moreover, the various objectives of performance evaluation should be aligned so that

[22] U.S. Office of Personnel Management, "Occupational Study of Federal Executives, Managers, and Supervisors: An Application of the Multipurpose Occupational Systems Analysis Inventory—Closed End (MOSAIC)," Report Number PRD 92-21, May 1992.

feedback, coaching, training, skill enhancement, and promotion are complementary and not working at cross purposes.

Team work is an increasingly important method of carrying out the Government's work; thus, as part of Recommendation 10, the Committee proposes that appropriate recognition of successful team performance be integrated into evaluation and reward and recognition systems. Similarly, consideration should be given to appropriately extending evaluation and reward and recognition systems to organizational units above the team level. The costs and benefits of any such extensions should be assessed, keeping in mind, of course, that recognition need not be costly to be effective.

At the same time, special attention to team and organizational performance should not mean the neglect of individual performance. The Committee believes the appropriate recognition of individual capabilities for leadership and for upward mobility is an important aspect of sound management that has value from the standpoints of both organizations and individuals.

The need for performance feedback to individuals, teams, and organizations points up the need for continuing and improved measurement of outcomes. The assessment of quality in its many dimensions implies a need to develop quality indexes that combine various single indicators and facilitate the monitoring of progress. The Committee believes that the more clearly organizational objectives can be linked to outcomes, the more clearly and certainly feedback on individual, team, and organizational performance will help departments and agencies meet and exceed their objectives.

Recommendation 11: Departments and agencies should establish skills clinics to assess training needs and enhance employee skills in delivering high-quality products and services.

The Department of Education's "America 2000: An Education Strategy," lists the President's national education goals and strategies for achieving them. The strategy calls for one-stop assessment and referral skills clinics in every large community and worksite, including Federal agencies. In skills clinics, people can readily discover how their present skills compare with those that they would like to have (or that they need for a particular job), and where they can acquire the missing skills and knowledge. (The work done by the Secretary's Commission on Achieving Necessary Skills in identifying the skills and characteristics required of workers contributes to the effectiveness of these individual assessments.) In addition, many skills clinics actually provide some of the training that is needed. The Committee endorses the concept of skills clinics and recommends their use in the Federal Government.

The skills clinics that the Committee recommends would:

- Assist employees in identifying their career goals and in preparing them to reach those goals;

- Diagnose employee needs, identifying specific skills needing upgrading for the current job or additional skills required for another job;

- Provide appropriate training or refer employees to training, including remedial training;

- Motivate employees through appropriate feedback to continue lifelong learning (a goal of the President's education strategy), as this is essential for meeting future job requirements.

A number of Federal Government skills clinics are currently operating, including the Air Force Skills Assessment and Training Center and the General Services Administration's Self-Learning Instruction Center, which use computerized training modules; OPM's Interactive Learning Center, which uses interactive video training modules; and the Department of Education's Horace Mann Learning Center. These skills clinics can serve as models, and the Committee also encourages departments and agencies to investigate advances made by other organizations in establishing skills centers. Further, agencies need not be limited to installing clinics at their worksites. They can be involved in job-related training carried out in high schools before young people reach the workforce; these initiatives can contribute greatly toward encouraging students to consider public service careers. Such cooperative training programs already have been established by OPM in Washington, DC, with high schools and with the Anacostia Public Service Academy. The Committee recommends expansion of such programs where departments and agencies have identified future workforce requirements that can be satisfied by investing in today's students.

Recommendation 12: OPM should continue to develop policies to maintain the framework for flexible work situations as a means of enhancing recruitment and retention. OPM should evaluate these flexibilities and study their impact on productivity and service delivery.

Hiring and keeping the kinds of employees who make up a high-quality workforce involve more than matching the right people with the right jobs and paying them competitive salaries. Employee benefits programs that include health insurance, vacation pay, and other features have long been a mainstay of total compensation packages in public and private sector organizations in the United States. Today, the complexity of workers' lives, the entry of so many women into the workforce, and a growing interest in better balance between career responsibilities and duties to home and family have created a new set of concerns for both workers and employers, and have prompted the addition of a new set of features to long-established benefits programs.

Employees today must find ways to meet their responsibilities to their employers while at the same time fulfilling the duties that fall to parents, adult children, and other care givers. At the same time, employers must find ways to accommodate these changing worker needs so that missions are accomplished by well-qualified, productive employees who are able to manage their lives in ways that let them focus on their jobs and careers during working hours. Employers who institutionalize methods to deal with these issues are likely to be better able to attract and retain quality workers than those who ignore work and family benefit issues or postpone dealing with them.

Using flexible work situations as a recruitment tactic will become particularly important if predicted labor shortages materialize as we approach the end of the decade. Although labor surpluses associated with the current economic situation have somewhat eased today's recruitment problems, finding the right number and quality of new recruits

for tomorrow's vacancies is still expected to present a challenge.

Recognizing the impact on recruitment and retention of helping workers address family problems, many employers, including the Federal Government, have created flexible work situations that relieve some of the conflict between work and family responsibilities. As the agency responsible for central management of the Government's human resources policies, OPM has issued regulations making family benefit programs available for individual Federal departments and agencies to adapt for their own employees and circumstances.

Where they have been implemented, these programs have generally been well received. Indeed, MSPB's 1991 report on the subject praised OPM initiatives to help employees balance their work and family responsibilities. At the same time, however, the report suggested that there is still considerable progress to be made and recommended that OPM build on its successes and exert renewed leadership on a number of issues on which the Government may have fallen behind other employers, e.g., the use of sick leave to care for elderly dependents and subsidizing child care programs.

Like MSPB, the Advisory Committee finds that the Government's efforts to date to address family benefit issues are commendable and represent a positive influence on organizational processes as depicted in the workforce quality model. We also believe that it is essential for OPM to maintain the framework that encourages agencies to use and refine family benefit programs to fit the widely varying needs of their workforces. Further, OPM, departments, and agencies should encourage the participation of employees and unions in devising the best approach for a given organization. The Committee believes that OPM's leadership in fashioning a wide array of flexible work situations, encouraging agencies to take advantage of the programs that will fit their particular circumstances, and facilitating the efforts of the interested parties in implementing these programs can lead to very positive long-term effects on workforce quality, both in terms of attracting good people to Federal jobs and in maintaining high morale and productivity of workers.

Beyond the recruitment and retention rationale for advocating flexible work situations, the Committee sees a need to link family benefit programs to changes in service quality and productivity. If a program has a positive effect on the quality or timeliness of what workers produce, and if the program is affordable, its expansion should be encouraged throughout Federal departments and agencies where similar results are likely. Accordingly, it is critical that the relationship of the various programs to the quality of service and productivity be examined. OPM's policies regarding work and family benefits should include requirements for determining the extent to which a given program has a direct impact on service quality or productivity.

In this regard, OPM should continue and, where practical, expand evaluation efforts such as are being applied to its pilot flexiplace program in which organizational and individual performance variables are being tracked, and data on cost and customer satisfaction are being gathered. It is particularly important that any changes in productivity take costs into account; the results of changes or additions to family benefits programs should be evaluated to ensure that a

positive effect on workforce quality and outcomes is produced by the investment made in the programs. An expensive program that pays for itself in terms of increased productivity or more timely, better quality products may turn out not to be so expensive after all. But without a realistic evaluation effort, the Government will be unable to reach these conclusions. Therefore, as Federal agencies launch or expand family benefit programs and flexible work situations, they should be required to pay serious attention to identifying and assessing the effects of their programs.

Recommendation 13: Department and agency heads should adopt policies and procedures to enhance the self-esteem of the Federal workforce, and should recognize, through word and deed, the value of the workforce and the virtues of workforce diversity.

Federal workers are surely as ethnically diverse and as broadly representative of the Nation's population as any group in the country. Their education spans all disciplines and degree levels. Their job assignments are as comprehensive in scope as the Department of Labor's "Dictionary of Occupational Titles," and range from actuary to zoologist.

Even though Federal civil servants hold some of the most challenging and stimulating jobs in the world, many of the functions they perform are also among the least appreciated by the people they serve. Few would disagree that IRS agents, customs inspectors, and other front line employees perform a valuable societal service; but that attitude frequently changes when it's *your* tax return, or *your* luggage that is being scrutinized.

Moreover, civil servants are typically on the receiving end of citizens' irritation with delays in Government service due to understaffing or with regulations they may perceive as unnecessary but that in fact derive from requirements of the law. While the number of Federal civil servants has remained relatively constant over the last two decades, the number of pages of statutes enacted for them to administer has grown immensely. As a result, these employees have increasingly been asked to do more with fewer resources. That trend is expected to continue.

Unfortunately, doing more with less often has meant not only working harder and smarter, but with less recognition, support, equipment, and assistance. In difficult economic times it is not only the civil servant's salary that is frozen; the budgets for those very support systems that facilitate job performance—such as training, equipment, and supplies— are also among the first to be eliminated or sharply reduced. In the past, even such basics as hot water, heating, and air conditioning have been reduced in Federal buildings in the name of economy. When such tangible support is withdrawn, it sends the message that civil servants are neither valued by the citizens they serve, nor by their own management.

Yet most of the Federal Government's career employees agree that they sought the jobs they hold because they wanted to make a difference, to make life better for the country and its citizens. Federal civil servants are keenly aware that their salaries are paid by the citizens they serve (Federal employees are taxpayers, too); their job satisfaction and motivation are intimately linked with the public's perception of them and their performance. When public perception of Federal

civil servants is negative, the consequences go far beyond the demoralization of the current workforce. The wider impact is that high-quality individuals tend to look elsewhere for employment, people with more limited qualifications are hired, the quality of the Federal workforce is damaged and the quality of Government service itself is diminished.

The Committee believes that as Federal civil servants are asked to do more with fewer resources, it will become ever more important for those in charge to demonstrate in word and deed, through actual policies and practices, that these employees are valued, that their work is appreciated, and that their ethnic and cultural diversity is prized for its enrichment of workforce contributions to the public good.

This message about the worth of Federal civil servants' contributions needs to be delivered from the highest levels, not only to the workers themselves, but also to the public they serve. Administration and OPM efforts in this regard should continue and intensify. If the external and internal image of Federal civil servants is negative, and efforts are not made to improve it, then it is only human nature for the workers to perform to that expectation. The results of performing in substandard ways will be a self-fulfilling prophecy: negative public image will lead to increasingly negative results, which in turn will lead to fewer incentives for high-quality people to enter the Federal workforce. The Committee urges that department and agency management continually guard against such a situation by demonstrating in speech and action that their employees are valued and by making such demonstrations of esteem an integral part of their organizational cultures.

Recommendation 14: MSPB, OPM, and other Federal departments and agencies concerned with workforce quality should establish a coordinating council to share information and resources and avoid duplication of effort. To guide this effort, OPM should collaborate with other council members and Federal employee union representatives to prepare a detailed and comprehensive workforce quality study plan.

The concern with Federal workforce quality which began in earnest a few years ago has led to a number of cooperative efforts. The 1989 conference on workforce quality assessment sponsored by OPM and MSPB is one example of such efforts. Likewise, the joint establishment of the Advisory Committee by OPM and MSPB serves as a prime example of bringing together a diverse group to discuss issues critical to progress in the workforce assessment arena. This report, containing what we believe to be a valuable outline for future activities in this area, is an indication of the contribution that can be made by such joint efforts.

The Committee recommends that coordination among OPM, MSPB, and other interested parties continue in order to further the process of workforce quality assessment. In Recommendation 4, the Committee stated its belief that the Government's program of workforce quality research should be institutionalized, with OPM providing assistance to individual agencies performing localized studies. Coordination of work such as this will result in enhanced communication, sharing of resources, increased efficiency from learning from one another, and curtailment of duplication of effort. The mechanism for this endeavor should be a permanent coordinating

council established by OPM, MSPB, and other Federal departments and agencies that are particularly interested or active in the workforce quality assessment area. The coordinating council should have close ties to other national organizations involved with workforce quality issues, such as SCANS, the National Advisory Council on the Public Service,[23] and the National Quality Council,[24] and should also work closely with employee unions.

To guide the work of the coordinating council, OPM should prepare a comprehensive workforce quality study plan, with the collaboration of council members and other interested parties. The plan should provide for a Governmentwide systematic approach to uniform workforce quality data collection and analysis over the next 5 to 10 years. Such a plan would serve as a common reference point for all individuals and organizations engaged in workforce quality assessment.

The study plan should be written to guide the assessment efforts of all concerned parties and integrate those efforts with OPM's own assessment work to produce the most comprehensive picture of Federal workforce quality possible. The plan should address the occupations or mix of occupations to be reviewed, the number to be reviewed each year, and the frequency with which they will be reviewed. In addition, the plan should provide guidance on data collection to make it feasible to combine the results of different agencies' assessment activities into an overall, general assessment of Federal workforce quality. As part of this effort, the coordinating council should establish a system to track Federal assessment projects and progress, or even to assign workforce assessment projects to agencies on a voluntary basis. Development of a timetable that forecasts completion of various stages of the effort also would be an important part of the council's contribution to the Government's workforce quality assessment program.

Other cooperative actions of the council should include developing a purposeful approach for packaging and distributing data to assure that reports on quality research are presented in useful and understandable ways to the various audiences of the material, e.g., the President, Congress, agency executives, operating personnel staff, researchers, and the general public.

The Committee believes that the long-term benefits of a coordinating council created to focus specifically on workforce quality issues would justify the expenditure of funds and staff resources that would be needed to establish and maintain the group.

[23]. Established by Public Law 101-363, the National Advisory Council on the Public Service Act of 1990.
[24] Established February 14, 1992, by Public Law 102-245, The American Technological Preeminence Act.

Workforce Quality Assessment and Improvement Model

Workforce quality is multifaceted and dynamic. Quality can be thought about and measured in many ways and at several levels within an organization. Because an organization must continually respond to changes in its environment both internal and external to the organization, the quality of its workforce changes continuously. Logically, improvements in workforce quality are realized when an organization is able to meet and adapt to changing demands in such a way that it becomes more productive, efficient, and responsive. To capture these concepts, the Advisory Committee recommends adoption of the model depicted in figure 1.

Defining and Assessing Quality

The model suggests that workforce quality can be defined and assessed in terms of three major components—inputs, organizational processes, and outcomes. While quality can be viewed separately for each of the three components, statements about workforce quality should consider the interactions that exist among them.

Inputs. Inputs consist of attributes possessed by the individual worker and environmental forces operating on the organization. Individual attributes represent the characteristics and qualities that workers bring to the organization or develop on the job. Included are attributes representing fairly stable characteristics as well as attributes that may change or improve over time. In general, individual attributes can be considered in terms of broad traits such as knowledge, skills, and abilities, as well as a variety of attitudes.

Environmental forces are circumstances that influence the organization and can affect quality. These forces reside either within or outside the organization and can be of a physical, operational, or environmental nature. Internal forces include conditions such as available resources and skill requirements. External forces, which presumably are more difficult to control, consist of conditions usually affecting the organization as a whole. These include the current political environment, economic forces, statutes and regulations, and various perceptions held by the public and other influential entities.

Organizational processes The term organizational processes refers to the programs, procedures, and strategies that maintain and influence quality. These can be formal human resource management practices such as employee recruitment, selection, and training. They can also be more dynamic, day-to-day work processes such as culture and climate, managing and supervising, matching people with jobs, employing a particular management style, motivational and developmental strategies, employee-supervisor relationships, and feedback and reinforcement systems. The importance of the organizational processes component is that it represents the active role that an organization must play in managing the quality of its inputs and outcomes.

Outcomes. Outcomes can be assessed at three levels within an organization—the individual, work teams or groups, and the entire organization.

Individual outcomes consist of behaviors and attitudes measured at the level of the individual worker. Individual outcomes can be measured in terms of job performance, training success, promotions, awards and commendations, job satisfaction, and turnover rate. Both job-generic and situation-specific measures are applicable.

Team outcomes consist of behaviors and attitudes at the level of the work group or team. Often, they represent products and measures of effectiveness. Examples include team performance, productivity measures, and levels of group satisfaction.

Organizational outcomes consist of two major types: productivity and service quality. These refer to various output and effectiveness measures for the organization as a whole, and are most likely related to the organizational goals and mission. While organizational outcomes can be viewed as an aggregate of individual worker or team outcomes, they can also be considered as a bottom line outcome of organizational practices. Examples of organizational outcomes include delivered products and services, level of customer satisfaction, and employee retention rates.

Applying the Model

It is evident that workforce quality is not easily defined or simply measured. Quality can be assessed and viewed in many ways. Although the model in figure 1 presents a relatively simple depiction of many variables, it is not meant to understate the complex nature of workforce quality assessment.

While the model provides a general framework for ways in which quality can be viewed and measured, organizations must tailor their definitions and assessments to fit their particular situations and needs.

Assessments about levels of quality should be made against some type of tangible standard. Standards provide a way for organizations to gauge whether improvements in quality are being achieved. If a standard is an absolute one, it refers to a stated expectation or need. For example, an organization may suggest to its workforce what level of quality is needed to produce a desired product or provide a particular service. If a standard is a normative one, then it is based on some parallel group or situation. An example of a normative standard might be the efficiency with which another organization is able to provide a service. Recently, the process of comparing an organization to external standards has been popularized as "benchmarking." Standards can also be viewed as either internal or external. In either case, standards need to be explicitly stated. Without explicitly stated standards, it is difficult for an organization to judge the meaning of quality and whether improvements are being made.

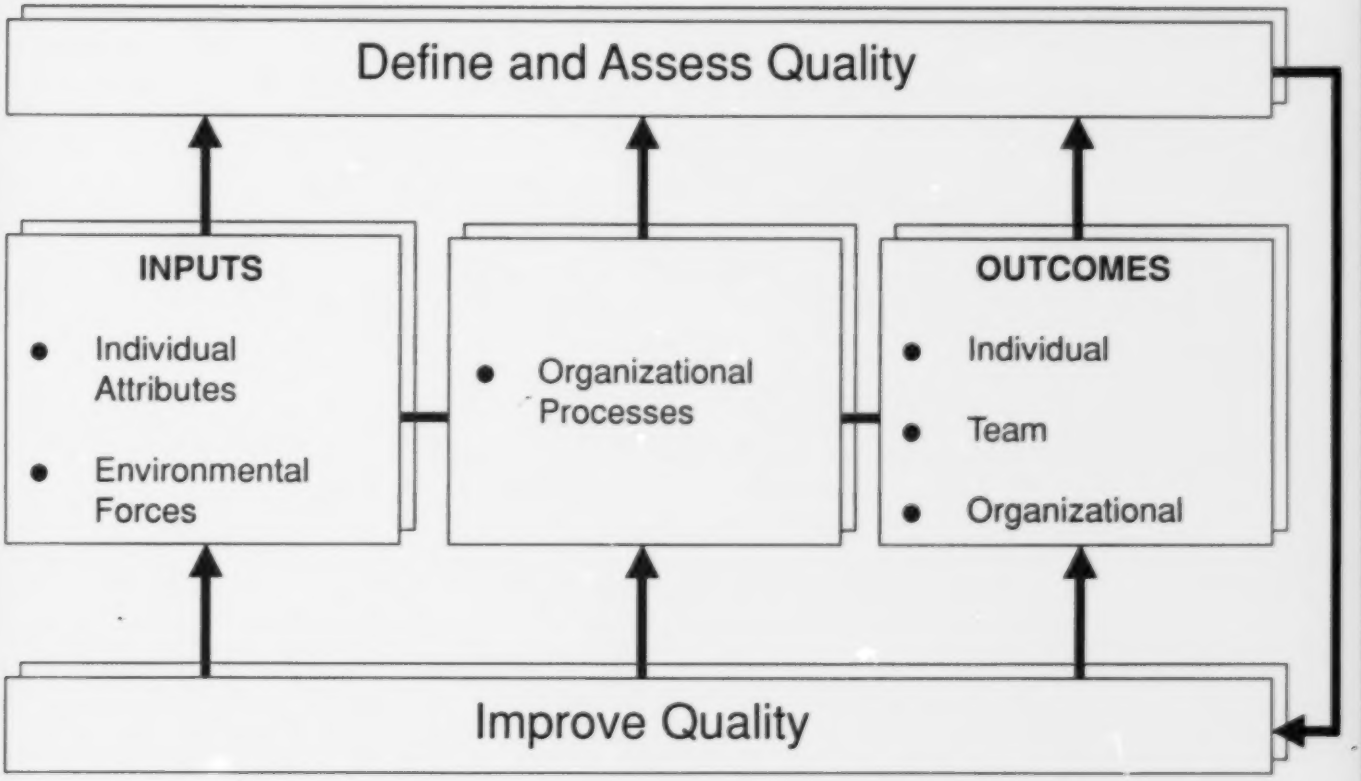
It is also the responsibility of the organization to manage the elements of the model to achieve and improve workforce quality. Because the organization is a living system that must respond to the inevitable changes in its environment, the model emphasizes the interaction within and among the three major model components. Of particular importance is the role that organizational processes play in improving the quality of measured inputs and outcomes.

For example, consider the influence of management practices. If management is effective, favorable outcomes are likely, while poor management probably will result in unfavorable outcomes, even if the inputs (i.e., individual attributes and environmental factors) are of high quality. Similarly, organizations can improve the quality of their measured outcomes through various practices. Team effectiveness, for example, can be improved by building cohesive work groups and then rewarding their good performance.

Finally, as the model in figure 1 shows, improvements in workforce quality are dynamic and never-ending. As organizations learn how to define and assess workforce quality, they must also determine how they can best manage their activities and resources to ensure that organizational changes keep up with current circumstances and new demands. Organizational changes made in this way are more likely to maintain and improve workforce quality.

Figure 1

Workforce Quality Assessment and Improvement Model



Advisory Committee on Federal Workforce Quality Assessment

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Ronald C. Pilenzo is a Senior Vice President and President of the international division of Personnel Decisions, Inc., a management consulting firm with offices in 8 U.S. cities. For 10 years previously, he was the president and CEO of the Society for Human Resource Management, the

world's largest society devoted to human resources management. Mr. Pilenzo has over 23 years' experience in executive human resource management positions in various companies. He was an advisory member to the Business Roundtable's employee relations committee and is the U.S. delegate to the World Federation of Personnel Management Associations. Mr. Pilenzo is an adjunct professor on the faculty of the University of Illinois' Institute for Labor and Industrial Relations and holds a bachelor's degree in industrial relations and economics, and a master's in business administration from the University of Detroit.

Benjamin Schneider is currently Professor of Psychology and of Business Management at the University of Maryland, College Park. Dr. Schneider's academic experience includes a position at Yale University, a Fulbright to Israel, and a chaired professorship at Michigan State University. He has been president of both the Organizational Behavior Division of the Academy of Management and the Society for Industrial and Organizational Psychology. Dr. Schneider is vice president of Organizational and Personnel Research, Inc., a consulting firm specializing in designing strategically focused human resources approaches to organizational effectiveness. Dr. Schneider hold a bachelor's degree from Alfred University, an MBA from the University of the City of New York (Baruch School), and a Ph.D. in industrial and social psychology from the University of Maryland.

John N. Sturdivant is the National President of the American Federation of Government Employees, AFL-CIO, representing over 700,000 Federal employees. He was first elected to this position in 1988 and reelected in 1991 after serving as executive vice president and administrative assistant to the executive vice president. Mr. Sturdivant also serves as a member of the AFL-CIO executive council and several boards and organizations dealing with Federal employee issues. Mr. Sturdivant received his bachelor's degree in labor studies from Antioch University, and has completed 2 years of law school at George Washington University.

Robert M. Tobias, the National President of the National Treasury Employees Union, serves as that body's chief officer, negotiator, litigator, and spokesperson. Immediately prior to his election as president, Mr. Tobias was NTEU executive vice president and general counsel and also served as chief spokesperson for all of the organization's national agreements. He was elected to the board of directors of the American Arbitration Association in 1985; he also was one of the founders of the Federal Employees Education and Assistance Fund, and now serves on its board of directors. Mr. Tobias hold a bachelor's degree and a master's degree in business administration from the University of Michigan. He is a graduate of the George Washington University Law School, where he has served on the adjunct faculty.

Sheila K. Velazco, currently National President of the National Federation of Federal Employees (NFFE), is the first woman ever elected to the presidency of a major Federal employee union. She served for over 17 years as a claims examiner with the U.S. Social Security Administration, during which time she was an active member of NFFE, serving first as a local officer, then as a NFFE Social Security Administration council officer and national vice president. She graduated from Indiana University with a degree in Spanish and government and a minor in Latin American studies. Ms. Velazco's prior work experience includes service in Lima, Peru, as a teacher under the auspices of the United States Information Agency, and service as a social worker for a farmworkers' organization.

Alfred M. Zuck is the Executive Director of the National Association of Schools of Public Affairs and Administration. Previously he served 25 years as a Federal executive, most recently as the assistant secretary of labor for administration and management. Mr. Zuck also served as the acting secretary of labor (January-February 1981), executive director of the Commission on Executive, Legislative and Judicial salaries, and director of Federal programs of the President's Council on Youth Opportunity. He is a fellow and member of the board of trustees of the National Academy of Public Administration and president of the International Institute of Administrative Sciences. Mr. Zuck holds a bachelor's degree from Franklin and Marshall College and a master's in public administration from the Maxwell School of Syracuse University.

Several other individuals also served for a time as members of the Advisory Committee and their contributions to the work of the committee are much appreciated:

Warren Bennis, Ph.D., Distinguished Professor of Business Administration, School of Management, University of Southern California.

Ralph C. Bledsoe, Ph.D., Chair, Standing Panel on the Public Service, National Academy of Public Administration.

Eleanor Chelimsky, Assistant Comptroller General, U.S. General Accounting Office.

John J. Franke, Director, Federal Quality Institute (deceased).

Janet Norwood, Ph.D., Senior Fellow, Urban Institute (formerly Commissioner, Bureau of Labor Statistics, Department of Labor).

James Peirce, Past President, National Federation of Federal Employees.

J. Merle Schulman, Past President, Federal Section, International Personnel Management Association.

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